

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKewed/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.

B7



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/684,460

10/15/2003

Shigeki Motoyama

SON-1907/CON

4695

23353

7590

09/08/2004

RADER FISHMAN & GRAUER PLLC  
LION BUILDING  
1233 20TH STREET N.W., SUITE 501  
WASHINGTON, DC 20036

EXAMINER

JORGENSEN, LELAND R

ART UNIT

PAPER NUMBER

2675

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/684,460

Applicant(s)

MOTOYAMA ET AL.

Examiner

Leland R. Jorgensen

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 7, 9, and 11 - 14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7, 9, and 11 - 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/662,879.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 101503.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7 and 11 - 14 are rejected under 35 U.S.C. 102(b) as being unpatentable over Itoh et al., WO 94/14112, in view of Kito et al., USPN 4,554,565.

### **Claim 7**

Itoh teaches an electronic apparatus having an input device. The input device has color changing layer 50. Itoh, page 8, line 19 – page 9, line 3; and figure 1. The color changing layer may be a reversible chromatic layer exhibiting color change in response to temperature change. Itoh, page 6, line 28 – page 7, line 12.

Itoh teaches a sensor means, layers 1 – 4. The sensor means is a sheet-type input portion laminated on the reversible chromatic layer and activates ON operation upon being pressed. Itoh, page 9, lines 3 – 13; and figure 1.

Itoh teaches that the reversible chromatic layer [color changing layer 50] is located on a front surface of the sheet-type input portion [sensor means 1 – 4] and an input operation is effected by direct contact with the reversible chromatic layer. Itoh, page 8, line 19 – page 9, line 13; and figure 1. Itoh teaches that the reversible chromatic layer is exposed outward. Itoh, page 1, lines 3 – 7.

Art Unit: 2675

Itoh does not specifically teach that the reversible chromatic layer has at least two coatings.

Kito teaches that a reversible chromatic layer that has two coatings [first reversible thermochromic image layer 3-1 or 3-2 and second reversible thermochromic image layer 4-1 or 4-2]. Each of the two coatings exhibits color change in response to temperature change. Kito, col. 1, lines 6 – 18; col. 2, lines 38 – 44; and figures 1 – 6.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the two layers as taught by Kito with the electronic apparatus having an input device as taught by Itoh to produce more intense color. Kito invites such combination by teaching,

The present invention relates to method for producing a reversible thermochromic display. More particularly, the invention relates to a method for producing a reversible thermochromic display composed of two or more overlapping layers of image formed on a support, at least one of which layers provides a reversible thermochromic image, wherein the colored images on the respective layers have different visual densities and the reversible thermochromic image changes color at a temperature lower or higher than a predetermined point and provides a color that is more intense and more easily discernible than the pale color of the other images.

Kito, col. 1, lines 6 – 18. Kito adds,

The reversible thermochromic display of the present invention finds many applications since it ensures an almost instantaneous reversible color change to red, blue, yellow, green, orange and purple, as well as many colors of delicate shades (by modifying the composition) within a specific temperature range. A plurality of images can be printed one on top of another on the support by any of a variety of known printing techniques such as gravure, screen and offset printing.

Kito, col. 2, lines 5 – 13. Kito, after teaching several applications, concludes,

Each of the labels produced distinct images successively at the appropriate temperature below or above a predetermined temperature. The images so produced were darker than the images on the other layers and hence were more visible than the latter. The color change was reversible and consistent results were obtained in repeated experiments.

Kito, col. 4, lines 40 – 55.

**Claim 11**

Kito teaches that the first coating of the coatings has a temperature dependent chromatic characteristic different than the second coating. Kito, col. 2, lines 45 – 60; and figure 7.

**Claim 12**

Kito shows the first coating [first reversible thermochromic image layer 3-1 or 3-2] laterally adjacent to the second coating [second reversible thermochromic image layer 4-1 or 4-2]. Kito, figures 4 – 6.

**Claim 13**

Kito shows the first coating [first reversible thermochromic image layer 3-1 or 3-2] in contact with the second coating [second reversible thermochromic image layer 4-1 or 4-2]. Kito, figures 4 – 6.

**Claim 14**

Kito shows a portion of the second coating [second reversible thermochromic image layer 4-2] removed to expose the first coating [first reversible thermochromic image layer 3-2]. Kito, figures 1 – 3.

3. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh in view of Kito et al. as applied to claims 7 above, and further in view of Spector, USPN 4,642,250.

**Claims 9**

Itoh teaches that the heat may be provided by a heat source in the writing instrument or by friction between a writing instrument and the input surface. Itoh, page 7, lines 1 – 12.

Art Unit: 2675

Neither Itoh nor Kito specifically teach that the heat required to cause temperature change of the reversible chromatic layer is provided through the direct contact thereto with a part of a human body.

Spector teaches that the heat required to cause temperature change of a reversible chromatic layer is provided through the direct contact thereto with a part of a human body.

Spector, col. 2, lines 3 – 8; col. 4, lines 13 – 17.

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the heat through direct contact with a part of a human body as taught by Spector with the chromatic input device of Itoh and Kito to make the device responsive to the human touch.

Spector invites such combination by teaching,

Because in this stretchable bathing suit the fabric is in direct contact with the body skin of the wearer 11, it is subjected to body heat by conduction and radiation. The interior of the human body has a normal temperature level which is usually said to be 98.6.degree. F. Actually, however, in the course of each 24-hour period, the body temperature rises and falls above and below this nominal value within a plus and minus 5.degree. F. range. On hot days during strenuous exercise, body temperature as high as 108.degree. F. has been routinely observed with no apparent ill effects.

Body temperature is determined by the relationship existing between the amount of heat internally generated which depends on basal metabolism and the amount of heat escaping from the body. Additional heat is produced as a result of muscular activity, this being dissipated by an increase in radiation, conduction or evaporation from the skin surface. Thus, the skin is the interface between the internally-heated body and the atmosphere.

Spector, col. 3, lines 19 – 38. Spector concludes, “In order to be chromatically effective, portions of the garment must be in close proximity to or in direct contact with the skin of the wearer so as to respond to heat energy emanating there from.” Spector, col. 4, lines 13 – 17.

***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 7, 9, and 11 – 14 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, and 4 – 7, respectively, of U.S. Patent No. 6,690,362 B1 in view of Itoh.

Claims 1, 2, and 4 – 7 of U.S.P.N. 6,690,362 respectively teach all aspects of claims 7, 9, and 11 – 14 except that the 6,690,362 claims that the reversible chromatic layer is located on a



rear surface of the sheet-type switch portion and that an input operation is effected by direct contact with the sheet-type switch.

Itoh teaches that the reversible chromatic layer [color changing layer 50] is located on a front surface of the sheet-type input portion [sensor means 1 – 4] and an input operation is effected by direct contact with the reversible chromatic layer. Itoh, page 8, line 19 – page 9, line 13; and figure 1.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the chromatic layer as taught by Itoh with the input device as taught by 6,690,362 to make the switch sensitive to outside temperatures.


### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leland R. Jorgensen whose telephone number is 703-305-2650. The examiner can normally be reached on Monday through Friday, 7:00 a.m. through 3:30 p.m..

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

lrj



DENNIS-DOON CHOW  
PRIMARY EXAMINER